18 : Web Applications

Types of Applications

- Native Applications
  - Installed directly on device, specific to OS
  - Can work without internet
  - Designed to take advantage of specific hardware
- Web Applications
  - Do not depend on OS
  - Require internet to work
- Hybrid Applications
  - Packaged in a native shell
  - Runs on web browser, uses API to talk to hardware
  - Elements of both native and web applications
- Progressive Web Applications
  - Accessible through a web browser and offline as a shortcut
  - Cannot use APIs
  - Elements of native and web applications

Web VS Native

- Comparison Summary

Native Applications	Web Applications
Runs on the OS	Runs on the web browser
Needs to be downloaded	Does not require downloads
Access to system resources (GPS, Camera)	No Access

Native Applications	Web Applications
Can work offline	Needs internet
Faster	Slower (Can be further slowed by internet speed)
Safer (More admin control)	Less Safe
May require maintenance and update costs	Automatically updated

Usability Principles

CHARM FUVEE

- ▼ Consistency - Maintain uniformity for ease of learning
- ▼ Help - Offer concise, context-sensitive support
- ▼ Aesthetics - Focus on essentials to avoid distractions
- ▼ Recognition over recall - Display information visibly for effortless interaction
- ▼ Match to real world - Align interface with user expectations for intuitive use
- ▼ Flexibility and efficiency - Cater to both novice and expert users for seamless experience
- ▼ User freedom - Allow easy undo and exit
- ▼ Visibility of system status - Keep users informed of system status for clear guidance
- ▼ Error prevention - Prevent mistakes through clear design and confirmation
- ▼ Error recovery - Provide clear, actionable error messages

Characters

- ▼ ASCII
  - ▼ Only 128 distinct characters as each character is 7 bits long
  - ▼ First 32 characters are non-printing characters used to control devices
  - ▼ Sometimes represented in HEX as it only requires 2 digits

- Unicode
  - Non standard number of bits (8-32), so many more characters can be represented
  - Used primarily for characters of other languages
  - More frequently used characters have fewer bits